

### ABSTRACT OF THE DISCLOSURE

The invention relates to the production of enzymatically active recombinant human and animal lysosomal enzymes involving construction and expression of recombinant  
5 expression constructs comprising coding sequences of human or animal lysosomal enzymes in a plant expression system. The plant expression system provides for post-translational modification and processing to produce a recombinant gene product exhibiting enzymatic activity. The invention is  
10 demonstrated by working examples in which transgenic tobacco plants having recombinant expression constructs comprising human hGC and IDUA nucleotide sequences produced enzymatically active modified human glucocerebrosidase and human  $\alpha$ -L-iduronidase. The recombinant lysosomal enzymes  
15 produced in accordance with the invention may be used for a variety of purposes, including but not limited to enzyme replacement therapy for the therapeutic treatment of human and animal lysosomal storage diseases.

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